

### ABSTRACT

A composite structure including a base substrate and a layer of a mixture of strontium titanate and strontium ruthenate is provided. A superconducting article can include a composite structure including an outermost layer of magnesium oxide, a buffer  
5 layer of strontium titanate or a mixture of strontium titanate and strontium ruthenate and a top-layer of a superconducting material such as YBCO upon the buffer layer.